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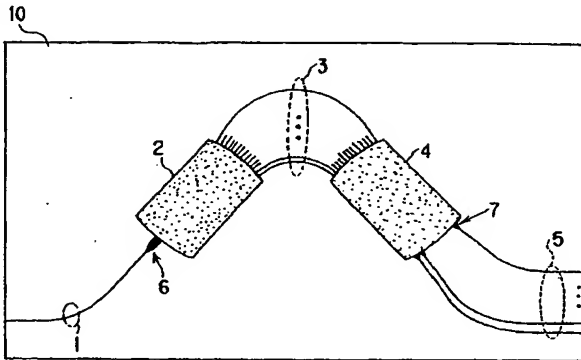
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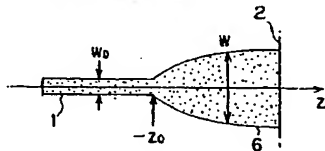
(54) Title: ARRAY WAVEGUIDE LATTICE TYPE OPTICAL MULTIPLEXER/DEMULTIPLEXER CIRCUIT

(54) 発明の名称: アレイ導波路格子型光合分波回路

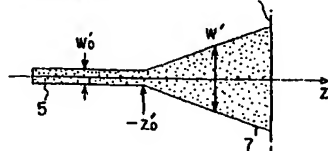


(57) Abstract: An array waveguide lattice type optical multiplexer/demultiplexer circuit in which wavelength dispersion is reduced. An input waveguide (1), a first slab waveguide (2), an array waveguide (3), a second slab waveguide (4) and an output waveguide (5) are connected sequentially. Furthermore, a parabola waveguide (6) is provided between the input waveguide (1) and the first slab waveguide (2), and a taper waveguide (7) is provided between the second slab waveguide (4) and the output waveguide (5). A parabola waveguide length Z_0 exists in a range $Z_{a,0} \leq Z_0 \leq Z_{p,0}$ determined by a parabola waveguide length $Z_{a,0}$ where the ratio of absolute amplitude between the main peak and the first side peak in the field distribution of far-field of the parabola waveguide (6) has an upper limit of 0.217, and a parabola waveguide length $Z_{p,0}$ where the relative phase of the main peak and the first side peak in the field distribution of far-field has a lower limit of 3.14 radian.

$$Z = A(W^2 - W_0^2) - Z_0$$



$$Z = A'(W'^2 - W_0'^2) - Z_0$$



(57) 要約: 本発明は、波長分散を低減したアレイ導波路格子型光合分波回路を提供する。入力導波路(1)と第1のスラブ導波路(2)とアレイ導波路(3)と第2のスラブ導波路(4)と出力導波路(5)が順次接続され、更に、入力導波路(1)と第1のスラブ導波路(2)との間に配置されたパラボラ導波路(6)と第2のスラブ導波路(4)と出力導波路(5)との間に配置されたテーパ導波路(7)とを有し、パラボラ導波路(6)の遠方界の電界分布のメイン・ピークと第1サイド・ピークの振幅絶対値の比が0.217を上限とするパラボラ導波路長 $Z_{a,0}$ と、遠方界の電界分布のメイン・ピークと第1サイド・ピークの相対位相が3.14ラジアンを下限とするパラボラ導波路長 $Z_{p,0}$ によって定められた範囲 $Z_{a,0} \leq Z_0 \leq Z_{p,0}$ にパラボラ導波路長 Z_0 が存在する。



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(84) 指定国 (広域): ARIPO 特許 (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), ユーラシア特許 (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), ヨーロッパ

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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Kokai Jitsuyo Shinan Koho	1971-2004	Jitsuyo Shinan Toroku Koho	1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	EP 783118 A1 (Alcatel Alsthom Compagnie Generale d'Electricite), 09 July, 1997 (09.07.97), Full text; all drawings & JP 9-189825 A & US 5751872 A	1-2
A	JP 7-333447 A (Nippon Telegraph And Telephone Corp.), 22 December, 1995 (22.12.95), Full text; all drawings (Family: none)	1-2

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
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Date of the actual completion of the international search
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Name and mailing address of the ISA/
Japanese Patent Office

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/17065

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

International application No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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